

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being anticipated by Wycech (U.S. Pat. 6,270,600). The rejections are traversed for the following reasons.

The invention defined in claim 1 relates to a frame joint structure for a vehicle. The frame joint structure is comprised of a first frame member being U-shaped in cross section and having a first sidewall, a second sidewall, and a bottom wall and defining an opening, a second frame member, similar to the first frame member, and being U-shaped in cross section and defining an opening, the second frame member having an end portion connected to at least one of the first and second sidewalls of the first frame member, a reinforcing member, with a first reinforcing member extending in the first frame member, and with a second reinforcing member extending from the second frame member and terminating at a joint with the first reinforcing member in the first frame. The vehicle frame joint structure further includes a plate member closing the openings of the first and second frame members so as to form a frame joint structure with closed cross sections, and a foamed resin surrounding the reinforcing member and filling a space defined by the plate member, the first and second frame members, and the reinforcing member such that the reinforcement member is spaced from the frame members and the

plate member by the foamed resin.

Wycech teaches a reinforced channel-shaped structural member. The structure is a unitary joint, formed by the intersection of two U-shaped members, each defining a channel (24, 26). The cross-section of the U-shaped members is closed by a plate (29). A foam layer (30) is disposed along the walls (22) and floor (23) of the channels (24, 26), and has foil (32) mounted on top of the foam layer (30). The foam layer (30) and foil (32) follow the contours of the channels (24, 26) so as to also be U-shaped. Thus, the structure of the member is such that, when closed by the plate (29), the cross-section has a hollow central portion defined by the plate (29), and the foil (32) along the walls (22) and the floor (23) of the channels (24, 26).

Claim 1 recites a reinforced joint structure wherein a reinforcing member is spaced from the outer walls of the joint structure by a foamed resin. The structural relationship of the foamed resin, the reinforcing member, the U-shaped frame member, and the plate member is shown in Fig. 2. The reinforcing member is shown to be surrounded by the foamed resin, which fills the space defined by the U-shaped member, the plate member, and the reinforcing member, and spaces the reinforcing member from the plate member and the U-shaped frame member. Claim 1 has been amended to more clearly recite the structural relationship of the reinforcing member, the U-shaped frame member, the plate member, and the foamed resin.

With reference to Fig. 4 of Wycech, it is considered apparent that Wycech does not teach a similar structural relationship between said members. Particularly, the reinforcing member (32) of Wycech defines a boundary for the foamed resin

between the walls of the U-shaped frame member (22, 23). However, the foamed resin only exists along the outside surface of the reinforcing member (32), that being the surface facing the U-shaped member (22, 23). The foamed resin is not taught to be present on the opposing surface of the reinforcing member. Therefore, Wycech does not teach foamed resin surrounding the reinforcing member.

Further, the space defined between the inner surface of the reinforcing member (32) and the plate member (29), where no foamed resin (30) is shown to be present, is taught as being hollow. Therefore, Wycech does not teach foamed resin filling a space defined by the plate member, the U-shaped frame member, and the reinforcing member. Such a space is shown to be hollow and not filled by foamed resin in Fig. 4.

Finally, the reinforcing member (32) of Wycech is shown to abut the plate member (29). Thus, Wycech fails to teach that the reinforcing member is spaced from the first and second frame members and the plate member by the foamed resin.

Consequently, Wycech fails to teach "foamed resin surrounding the reinforcement member and filling a space defined by the plate member, the first and second frame members and the reinforcing member, such that the reinforcing member is spaced from the first and second frame members and the plate member by the foamed resin", as required by claim 1. As Wycech does not teach all features recited in claim 1, the anticipation rejection of claim 1 based on Wycech is without merit. Reconsideration and withdrawal of the rejection is requested. Claim 2 depends from claim 1 and is likewise considered to be allowable over the art.

With further reference to claim 2, the reinforcing member recited in claim 1 is

a generally T-shaped open-ended pipe. While Wycech teaches a generally T-shaped reinforcing member, Wycech fails to teach that the reinforcing member is an open-ended pipe. Rather, the reinforcing member of Wycech is a sheet of foil formed into a U-shape. The "open-ended pipe" recitation of claim 2 requires the reinforcing member to have a pipe shape, as defined by the specification and generally known in the art. A pipe, as known to one skilled in the art, is not a U-shaped structure, but rather has a closed cross section. As the reinforcing member of Wycech does not have a closed cross section, Wycech fails to teach a T-shaped pipe as the reinforcing member. Therefore, notwithstanding the patentability of claim 1, claim 2 is considered to be independently allowable over the art.

Claim 11 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wycech in view of Kropfeld (U.S. Pat. 6,896,320). The rejection is traversed for the following reasons.

Claim 11 depends from claim 1 and further recites that the second frame member is connected at an end portion to a sidewall of the first frame member, said sidewall of the first frame member having a hole formed therein. The hole is sized so as to allow the reinforcing member to freely extend through the hole. An annular space surrounding the reinforcing member and the sidewall at the hole is filled with foamed resin.

Kropfeld is cited for teaching a reinforced joint structure. Particularly, Kropfeld is cited for teaching a joint having an annular space surrounding a reinforcing member (110) and a sidewall of the frame member (100) at a hole in one of the sidewalls. The space is filled with foamed resin (120).

Initially, even if the references are properly combinable, Wycech and Kropfeld

fail to teach all features of the claimed invention. It is initially noted that the element cited to by the Examiner as a reinforcing member (110) in Kropfeld, is in fact a bulkhead insert. The bulkhead insert is used to "form a reinforcing region for subsequently introduced reinforcing material" (Col. 2, lines 43-46). The bulkhead insert is not recited as being a reinforcing member in and of itself, but as a member to aid in the positioning of the foamed resin.

Further, the insert is taught as being sealed to the frame body with a sealant (Col. 2, lines 59-60). Thus, if the insert is directly attached to the frame body with a sealant, the insert (cited as the reinforcing member of the claim) cannot be surrounded by foamed resin, as required by claim 11.

Finally, it is asserted that Wycech and Kropfeld are not properly combinable with one another. The structure taught by the Wycech reference is taught for the purpose of structurally reinforcing a frame structure while reducing the amount of foamed resin used. Wycech teaches that the foamed resin is both expensive and heavy. By reducing the amount used in reinforcement, the frame structure can be produced to be lighter weight at less expense. To reduce the amount of foamed resin used, Wycech teaches isolating the foamed resin between a foil sheet and the inner walls of the frame member. Such a structure leaves a hollow central opening bounded on top by the plate member, and on the bottom and sides by layered walls consisting of: the foil sheet, the foamed resin, and the frame member.

Kropfeld, on the other hand, teaches completely filling a hollow frame member with foamed resin. The foamed resin is to be contained within a desired portion of the frame member through the use of a bulkhead insert. Thus, Kropfeld teaches completely filling the hollow frame member, and containing the foamed

resin within a specified region.

It is therefore submitted that the two references teach away from their combination. While Wycech teaches reducing the amount of foamed resin within the cross section of a frame member by bounding the foamed resin to the periphery of U-shaped walls, Kropfeld teaches completely filling the frame members with foamed resin. One skilled in the art would not look to modify the teachings of the Wycech reference with the teachings of the Kropfeld reference, as the two references teach against their respective combination. Accordingly, without a teaching, suggestion, or motivation to combine, the references cannot properly be combined to form an obviousness rejection.

Therefore, it is submitted that: (1) the references are not properly combinable, and (2) even if the references were properly combinable, they fail to teach or suggest all features of claim 11. Accordingly, the combined references fail to render claim 11 obvious. Reconsideration and withdrawal of the rejection of claim 11 is requested.

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wycech in view of Madsen (U.S. Pat. 2,239,173). The rejection is traversed for the following reasons.

Claim 3 depends from claim 1 and recites that the reinforcing member is a generally L-shaped open ended pipe. Madsen is cited for teaching a L-shaped reinforcing member.

Madsen fails to overcome the shortcomings of Wycech in regards to claim 1. Particularly, Madsen fails to teach "foamed resin surrounding the reinforcement member and filling a space defined by the plate member, the first and second frame

members and the reinforcing member, such that the reinforcing member is spaced from the first and second frame members and the plate member by the foamed resin", as required by claim 1. For this reason alone, the combined references fail to render claim 3 obvious.

Further, it is asserted that Madsen and Wycech are not properly combinable with one another. Particularly, the reinforcing member of Madsen is taught as being attached to a hollow frame joint, thereby individually reinforcing the frame joint without the use of foamed resin. Meanwhile, Wycech teaches the foil sheet as establishing a boundary to which the foamed resin can expand, while the foil sheet has very little reinforcing power of its own. Rather, Wycech looks to the foamed resin as the reinforcement tool. Thus, Wycech uses the "reinforcing member" to support the foamed resin and Madsen uses the L-shaped member as the reinforcing member, it is asserted that there is no reason to combine the references with one another.

For the above reasons, the combined references fail to render claim 3 obvious. Reconsideration and withdrawal of the rejection of claim 3 is requested.

Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wycech in view of Heilemann (U.S. Pat. 3,948,247). The rejection is traversed for the following reasons.

Claim 4 depends from claim 1 and recites that the plate member, the first frame member, and the second frame member are made from a first metal material while the reinforcing member is made of a second metal material, wherein said first and second reinforcing materials are different.

Heilemann is cited for teaching a device having a combination of an

aluminum plate with a copper pipe. However, Heilemann fails to remedy the shortcomings of Wycech in regards to claim 1. Particularly, Heilemann fails to teach "foamed resin surrounding the reinforcement member and filling a space defined by the plate member, the first and second frame members and the reinforcing member, such that the reinforcing member is spaced from the first and second frame members and the plate member by the foamed resin", as required by claim 1.

Accordingly, the combined references fail to render claim 4 obvious. Reconsideration and withdrawal of the rejection of claim 4 is requested.

Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wycech in view of Kropfeld. Claims 14 and 17-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wycech and Kropfeld as applied to claim 12, and further in view of Heilemann. The rejections are traversed for the following reasons.

The rejection of claim 12, like the rejection of claim 11, is dependent upon the proper combination of Wycech and Kropfeld. The argument against the proper combination of Wycech and Kropfeld presented for the patentability of claim 11 is considered pertinent to the patentability of claim 12. The argument will not be repeated, but is hereby incorporated in full. As the references are not properly combinable, the obviousness rejection of claim 12 is without merit. Reconsideration and withdrawal of the rejection of claim 12 is requested. Claims 14, 17, and 18, which depend from claim 12, are likewise considered to be allowable over the art.

Claim 19 depends from claim 11. The addition of Heilemann fails to remedy the shortcomings of Wycech and Kropfeld in regards to claim 11. Further, as mentioned above, Wycech and Kropfeld are not properly combinable with one another. Therefore, the rejection of claim 19 is considered to be without merit.

Reconsideration and withdrawal of the rejection is requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. SHM-14986.

Respectfully submitted,

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